**Supplemental Digital Content 2**

**Supplementary Figure 1: Fall pH1N1 Period Versus Temporal Trend of Emergency Department Encounters**

**Supplementary Table 1: Sensitivity Analysis of Change in Hospital Volume During pH1N1 Fall Wave Compared to Baseline Years Based on Influenza-Specific Codes1**

|  |  |  |
| --- | --- | --- |
| **Disease category** | ***HOSPITAL-SPECIFIC PANDEMIC PERIOD*** | ***UNIFORM FALL PANDEMIC PERIOD*** |
|  | ***Emergency departments, all encounters*** | ***Emergency departments; all encounters*** |
|  | **2005-2008 Annual Mean**  | **2009**  | **% change in 2009 (P-value)** | **2005-2008****Annual Mean** | **2009**  | **% change in 2009** **(P-value)** |
| **Influenza** | 1,586 | 153,971 | **9,608.1%(P < 0.001)** | 3,889 | 245,120 | **6,202.6%(P < 0.001)** |
|  | ***Emergency departments, treat-and-release encounters*** | ***Emergency departments; treat-and-release encounters*** |
|  | **2005-2008 Annual Mean**  | **2009**  | **% change in 2009 (P-value)** | **2005-2008****Annual Mean** | **2009**  | **% change in 2009** **(P-value)** |
| **Influenza** | 1,372 | 141,108 | **10,183.6%(P < 0.001)** | 3,403 | 224,266 | **6,491.1%(P < 0.001)** |
|  | ***Inpatient admissions*** | ***Inpatient admissions*** |
|  | **2003-2008 Annual Mean**  | **2009**  | **% change in 2009 (P-value)** | **2003-2008****Annual Mean** | **2009**  | **% change in 2009** **(P-value)** |
| **Influenza** | 643 | 24,190 | **3,664.6%(P < 0.001)** | 1,879 | 39,268 | **1,990.0%(P < 0.001)** |

1Baseline years for the inpatient analysis are 2003 – 2008. For the emergency department analysis, baseline years are 2005 – 2008.

**Supplementary Table 2: Hospital Volume During pH1N1 Fall Wave Compared to 2003 – 04 Seasonal Influenza Epidemic Based on Influenza-Specific Codes**

|  |  |  |
| --- | --- | --- |
| **Disease category** | ***2003-04*** | ***Fall 2009*** |
|  | ***Emergency departments, all encounters***1 | ***Emergency departments,*** ***all encounters***1 |
|  | **Number of encounters** | **Encounters** **per day** | **Number of encounters** | **% Change from** **2003 - 04** | **Encounters per day** | **% Change from** **2003 - 04** |
| **Influenza** | 54,687 | 781 | 99,434 | 81.82% | 947 | 21.25% |
|  | ***Emergency departments, treat-and-release encounters***1 | ***Emergency departments; treat-and-*** ***release encounters***1 |
|  | **Number of encounters** | **Encounters** **per day** | **Number of encounters** | **% Change from** **2003 - 04** | **Encounters per day** | **% Change from 2003 - 04** |
| **Influenza** | 47,787 | 683 | 92,394 | 93.34% | 880 | 28.84% |
|  | ***Inpatient admissions***2 | ***Inpatient admissions***2 |
|  | **Number of encounters** | **Encounters** **per day** | **Number of encounters** | **% Change from** **2003 - 04** | **Encounters per day** | **% Change from 2003 - 04** |
| **Influenza** | 33,277 | 475 | 39,225 | 17.87% | 374 | -21.26% |

1The emergency department analysis was performed using data from the following states, which were available in both time periods: Georgia, Hawaii, Indiana, Maryland, Missouri, Minnesota, Nebraska, South Carolina, Tennessee, and Vermont.

2The inpatient analysis was performed using data from the following states, which were available in both time periods: Arizona, California, Colorado, Georgia, Hawaii, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, Minnesota, Nebraska, Nevada, New Jersey, Ohio, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Virginia, Vermont, Washington, and Wisconsin.

**Supplementary Figure 2: Adjusted1 Odds Ratios for Mortality by Condition, High-Surge Hospitals Versus No-Surge Hospitals During the pH1N1 Fall Wave**



1Covariates (not shown on figures) include age, sex, All Patient Refined Diagnosis Related Group (APR-DRG) severity, presence of 29 Comorbidity Software variables, hospital size, hospital teaching status, hospital ownership/control, pneumonia and influenza diagnosis, as in the main analysis presented in figure 2. In addition, we adjusted for a number of local factors potentially influencing quality of care, including access to care (county-specific number of primary care physicians per capita and Federally Qualified Health Centers in 2009 from the Area Resource File [ARF]), density of surrounding hospitals (Herfindahl-Hirschman Index [HHI] measured using hospital county as the market area), and local insurance coverage (county-specific percentage of people aged 18-64 years without health insurance). We also adjusted for availability of a cardiac catheterization lab at the hospital level.